STS-124 Post-Mission Summary

Space Shuttle Discovery launched on time from Kennedy Space Center (KSC) Launch Pad 39A on May 31, 2008 at 4:02 PM CDT (2102 UTC). After 13 days, 18 hours, Discovery landed safely at KSC on June 14, 2008 at 11:15 CDT (1608 UTC). The 26th shuttle mission to the International Space Station, STS-124 was the second of three flights that will launch components to complete the Kibo laboratory. The mission included three spacewalks. The lab's logistics module, which was installed in a temporary location during STS-123, was attached to the new lab.

On launch day, the seabreeze pushed across KSC with showers just west of the launch pad several hours before launch time. However, the seabreeze had pushed west of KSC by early afternoon with near ideal conditions for launch. Thunderstorms were occurring over central Florida but were well outside the 20 nautical mile thunderstorm flight rule limit

The weather conditions were more challenging for the Transoceanic Abort Landing (TAL) sites. An upper low had been spinning over Spain for several days, drifting slowly to the northwest. Timing differences in the models made forecasting where precipitation would develop difficult. Initially on launch-2 day, “NO GO” forecasts were issued for Moron and Zaragoza, Spain with a “GO” forecast for Istres, France. Space Shuttle launches require only one of the three TAL sites have “GO” weather.

As the upper low began to finally move to the northwest, forecasts were updated to “GO” for Moron but “NO GO” for Istres. On launch day, Moron weather remained favorable and conditions at Istres improved and was “GO”. Zaragoza was observed “NO GO” at TAL landing time.

On landing day, high pressure off the North Carolina coast began to ridge into central Florida. Balloon sounding data showed drier air moving into KSC above 2000 feet starting approximately 10 hours before landing time. Model data had been forecasting this to occur for several days so confidence was high on a dry forecast with no cloud ceiling issues. Winds above the surface were quite light and only a weak seabreeze developed, thus mitigating convergence near KSC. As a result clouds that developed never became organized, though an update to the forecast was issued to increase the cloud coverage from FEW to SCT, but still remaining “GO”. The official landing observation reported 2/8 coverage of clouds over the KSC Shuttle Landing Facitility at touchdown.

The SMG ascent/entry team for STS-124 consisted of meteorologists Rich Lafosse, Mark Wiley, Kurt Van Speybroeck, Doris Hood and Paul Wahner.

Submitted by: Mark Wiley STS-124 Lead Meteorologist Trainee